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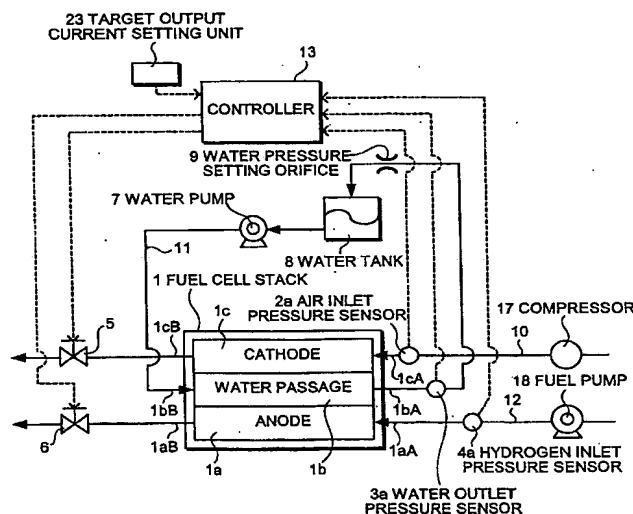
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(57) Abstract: A fuel cell stack (1) comprises a reactive gas passage (115, 1c, 116, 1a) and a water passage (117, 1b) substantially parallel thereto, and a reactive gas is humidified by water permeating from the water passage (117, 1b) through a porous member (112a, 112c). The pressure reduction amounts in the reactive gas passage (115, 1c, 116, 1a) and the water passage (117, 1b) are respectively calculated based on the power generation load of the stack (1). From the pressure reduction amounts in the water passage (117, 1b) and the reactive gas passage (115, 1c, 116, 1a), the pressure of the reactive gas supplied to the reactive gas passage (115, 1c, 116, 1a) is controlled such that the difference in pressure between the reactive gas passage (115, 1c, 116, 1a) and the water passage (117, 1b) is within a predetermined range, whereby the reactive gas is humidified in a desirable state.



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